

PATIENT

Joshua Remboldt

PRESENTING CLINICAL SIGNS

History: BAR (o says p has good days and bad at home). Enlarged liver upon palpation of abdomen Primary Question/Differential to Be Answered in This Exam Liver shut present?

SPECIES

Canine

Abnormal PE/Chem/CBC/UA Results: bw from previous clinic-elevated bile acids per them Bile acids 531.4 lab work attached

BREED

Cairn Terrier

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** itself was unremarkable. Anechoic urine was present. The urinary bladder revealed a small calculus, measuring 5.0mm. The residual prostate was uniform, measuring 0.81 cm.

SEX

Neutered Male

The **kidneys** revealed normal size and structure, corticomedullary definition and ratio for this age. The cortices presented largely uniform texture with normal echogenic relationship to liver and spleen. Medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities. The right kidney measured 5.68 cm. The left kidney measured 5.02 cm.

AGE

3 Years

Adrenal Glands

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 1.57 cm x 1.18 cm at the cranial pole and 0.44 cm at the caudal pole. The left adrenal gland measured 1.36 cm x 0.27 cm at the cranial pole and 0.31 cm at the caudal pole.

WEIGHT

19.7 Pounds

INTERPRETED BY

Eric Lindquist, DMV,
DABVP, Cert. IVUSS

Spleen

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted.

HOSPITAL NAME

Pawsitive Wellness VC

Liver

The **liver** was subnormal in size with increased portal markings and slight irregular contour, consistent with fibrosis and capsular retraction. The vena cava appears subjectively enlarged. The portal vein was not visible, which would suggest being subnormal in size, however, artifact interference was present. I cannot rule identify or rule out a portosystemic shunt, however, no evidence of intrahepatic shunting was present. The gallbladder and common bile duct were unremarkable.

REFERRING VET

Dr. Hardy

Gastrointestinal

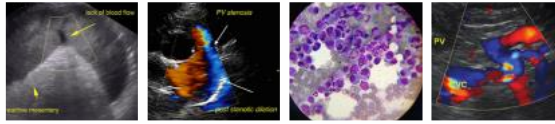
Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No

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PATIENT obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

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Pancreas

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

SPECIES

Canine

ULTRASONOGRAPHIC FINDINGS

BREED

Cairn Terrier

- Microhepatica with remodeling, possible extrahepatic portosystemic shunting yet not visible owing to artifactual interference.
- Bladder calculus

SEX

Neutered Male

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

I recommend CT with contrast in this patient for further definition. I am concerned about the integrity of the residual hepatic parenchyma, however, given the amount of remodeling and Microhepatica, medical management with the following may prove effective temporarily.

AGE

3 Years

Hepatic Support for Bile Acid Elevation +/- Hepatic Encephalopathy

Royal Canin Hepatic Support diet or Hills L/D, Metronidazole (7.5 mg/kg PO bid) over the next 14 days, **Lactulose** (Oral: 3.1-3.7 g/5 ml lactulose in a syrup base) long term to target 2-3 soft stools/day, with a **high-quality protein supplement** of minor amount of **yogurt** or **cheddar cheese**. Monitor bile acids, with attention paid to dropping albumin, BUN or cholesterol. SAME and nutraceuticals as needed. **Ursodiol** (10-15 mg/kg p.o. q24h) can be considered as hepatoprotectant and to enhance bile flow. **Zinc** serum level keep between 200—500 ug/dl. If deficient then Tx zinc acetate 1-3 mg/kg/day. Gastrointestinal protectants are recommended if the patient is anorexic.

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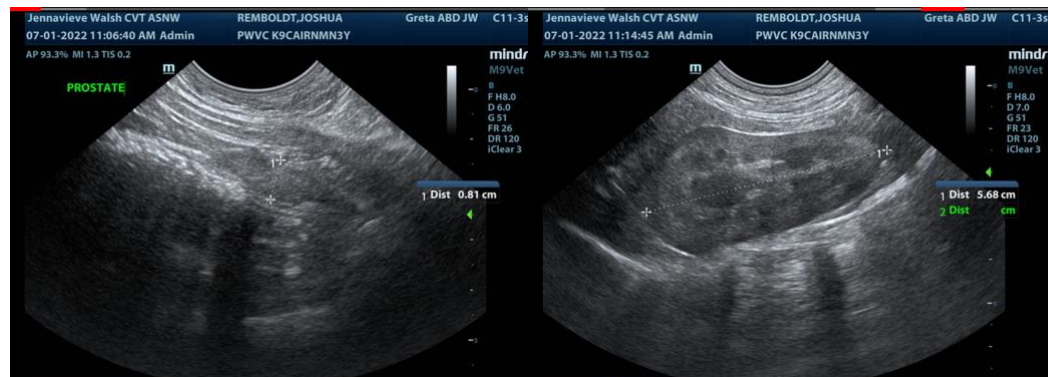
Dr. Hardy

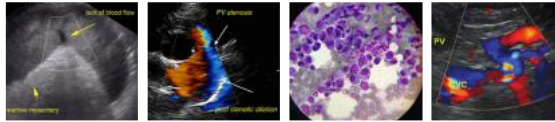
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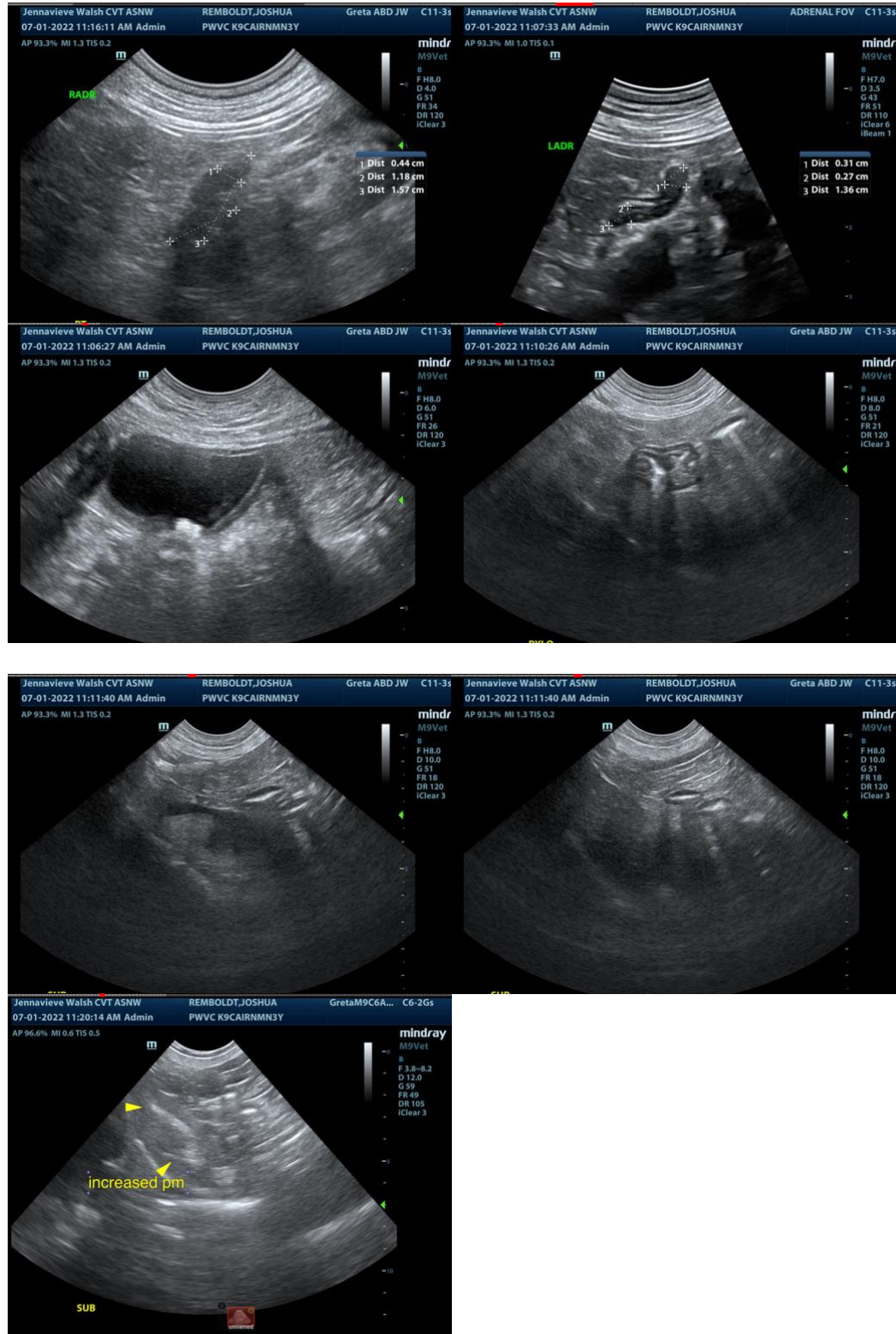
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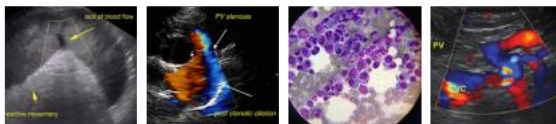
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PATIENT The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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SPECIES

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Canine

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com
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SEX

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